

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

1. (Currently amended) A method of designing a system including an element, wherein the element connects a plurality of components, the method comprising:
 - establishing a system design including the plurality of components;
 - generating a diagram associated with the system design, wherein the diagram includes the element and the plurality of components;
 - establishing guidelines for designing the ~~system~~ element, the guidelines including information reflecting attributes of at least one of the system and the element; and
 - automatically determining a routing pattern in the system for the element based on the diagram and the guidelines.
2. (Previously presented) The method of claim 1, wherein the element includes one or more connections and determining a routing pattern includes:
 - determining one or more sets of one or more connections that can be bundled; and
 - determining a routing pattern for each bundle.
3. (Currently amended) The method of claim 1, further including:
 - receiving one or more revised guidelines for designing the ~~system~~ element; and
 - determining a revised routing pattern in the system for the element based on the diagram and the revised guidelines.

4. (Previously presented) The method of claim 1, further including:
providing a drawing illustrating the system and the determined routing patterns.
5. (Previously presented) The method of claim 1, wherein establishing
guidelines for designing the system includes:
accessing guidelines associated with the system design.
6. (Previously presented) The method of claim 1, wherein establishing
guidelines for designing the system includes:
accessing guidelines associated with the plurality of components or the element.
7. (Currently amended) The method of claim 1, further including:
automatically providing information about the ~~designed~~ system design.
8. (Currently amended) The method of claim 7, wherein automatically providing
information includes:
providing at least one of: a three-dimensional drawing of the system; a two-dimensional
drawing of the system; a list of ~~elements and~~ components; and a bill of materials associated with
at least one of the system, the element, and the components.
9. (Original) The method of claim 1, wherein the element includes a harness.

10. (Currently amended) A computer-readable medium including instructions for performing a method, when executed by a processor, for designing a structure for routing a plurality of elements for connecting components, the method comprising the steps of:

establishing a system design including a plurality of components;

generating a diagram associated with the system design, wherein the diagram includes the plurality of elements and the plurality of components;

accessing guidelines for designing the structure, the guidelines including recommendations for routing the elements in the structure; and

automatically determining routing patterns in the structure for the plurality of elements based on the diagram and the guidelines.

11. (Original) The computer-readable medium of claim 10, wherein the step of determining routing patterns includes the steps of:

determining one or more sets of one or more elements that can be bundled; and

determining a routing pattern in the structure for each bundle.

12. (Previously presented) The computer-readable medium of claim 10, further including the steps of:

receiving one or more revised guidelines for designing the structure; and

determining a revised routing pattern in the structure for the plurality of elements based on the diagram and the revised guidelines.

13. (Original) The computer-readable medium of claim 10, further including:
providing a schematic illustrating the structure and the determined routing patterns.
14. (Original) The computer-readable medium of claim 10, wherein the step of
accessing guidelines for designing the structure includes the step of:
accessing standards associated with the system design.
15. (Original) The computer-readable medium of claim 10, wherein the step of
accessing guidelines for designing the structure includes the step of:
accessing standards associated with the plurality of elements.
16. (Original) The computer-readable medium of claim 10, further including the
step of:
automatically providing information about the designed structure.
17. (Previously presented) The computer-readable medium of claim 10,
wherein the step of automatically providing information includes the step of:
providing at least one of: a three-dimensional drawing of the structure; a two-
dimensional drawing of the structure; a list of elements and components; and a bill of materials.
18. (Original) The computer-readable medium of claim 10, wherein the structure
includes a harness and the elements include wires.

19. (Currently amended) A system for designing a system including an element, wherein the element connects a plurality of components, the system comprising:

- a processor; and
- a memory, wherein the memory includes
 - a computer-aided design module for, when executed by the processor, establishing a system design and generating a diagram associated with the system design, wherein the diagram includes the element and the plurality of components;
 - a design module for, when executed by the processor, designing the element based on one or more guidelines for designing the system, the guidelines including at least one recommendation for routing the element in the system; and
 - a routing design module for, when executed by the processor, automatically determining routing patterns in the system for the element based on the diagram and the guidelines.

20. (Original) The system of claim 19, wherein the routing design module is software designed to work with the computer-aided design module.

21. (Currently amended) A system for designing a system including an element, wherein the element connects a plurality of components, the system comprising:
- a routing design module configured to perform the following steps:
 - establishing a system design including the plurality of components;
 - generating a diagram associated with the system design, wherein the diagram includes the element and the plurality of components;
 - establishing guidelines for designing the ~~system~~ element, the guidelines including at least one recommendation for routing the element in the system; and
 - automatically determining a routing pattern in the system for the element based on the diagram and the guidelines.
22. (Currently amended) A method of routing an element among a plurality of components, the method comprising:
- establishing the plurality of components to be connected;
 - establishing routing guidelines including at least one recommendation for routing the element in the system; and
 - automatically determining a routing of the element to connect the plurality of components based on the routing guidelines.
23. (Currently amended) The method of claim 1, wherein establishing guidelines for designing the element includes establishing ~~guidelines for designing the system that include~~ recommendations for routing the element through the system design.

24. (Currently amended) The method of claim 1, wherein establishing guidelines for designing the element includes establishing the guidelines ~~for designing the system~~ by prompting a user to answer one or more questions.

25. (Currently amended) The system of claim 21, wherein establishing guidelines for designing the element includes accessing the guidelines ~~for designing the system~~ from a centralized location.

26. (New) The system of claim 21, wherein the routing design module is configured to establish guidelines for designing the element that include recommendations for routing the element in the system based on information reflecting attributes of at least one of the system, the element and the components.

27. (New) A method for designing an element that connects a plurality of components in a system, the method comprising:

establishing a list of components and connections among the components;

generating a diagram of the system based on the list, the diagram including the element and the listed components;

establishing guidelines for designing the element, the guidelines including information reflecting a geometry of the system; and

automatically determining a routing pattern in the system for the element based on the diagram and the guidelines.